

Problem Statement

- The growth of the picosatellite market and the problem of space junk necessitates simple and effective means of de-orbiting a satellite. The DragEN space tether addresses this need by responsibly de-orbiting the Satellite within two weeks of deployment.
- Parabolic flight testing will validate the effectiveness of the deployment, unraveling, and breaking of the ballast.
- The technology has use in the commercial space industry, as well as in government sponsored and educational missions.

Technology Development Team

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Proposed Flight Experiment

Experiment Readiness:

- The experiment is currently ready for flight.

Test Vehicles:

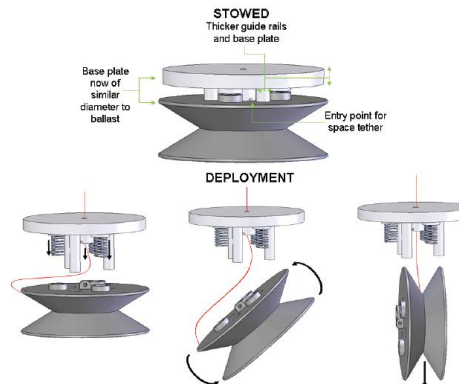
- Parabolic Aircraft 10' by 10' test section

Test Environment:

- The equipment has not been flown previously in zero g, it has only been tested at 1g.

Test Apparatus Description:

- The device will be stowed until zero gravity, when it will be deployed by cutting the filament holding the device in place. The springs will eject the ballast and it will unwind to a distance as restricted by the aircraft test section.



Technology Maturation

- We are currently between TRL-4 and TRL-5.
- Parabolic flight tests will bring DragEN to TRL-6.
- We plan a series of vibration and thermal testing to mature to TRL-8.
- Launch is planned with our first customer, Manipal Institute of Technology, for on-orbit demo.

Objective of Proposed Experiment

- The experiment has three objectives: Testing deployment phase, and measuring the rollout phase and deceleration rate.
- The data obtained from the flight will help develop a more reliable means of deployment. Similarly, the rollout and acceleration rates will allow us to refine the design so that the device operates as predicted.